

II. Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A system for manufacturing semiconductor integrated circuit (IC) devices, the system comprising:
 - an operating control system;
 - a plurality of process tools each in communication with the operating control system;
 - a process intermediate station in communication with the operating control system, wherein the process intermediate station is one of a stocker and an overhead buffer (OHB) that is not integral to any of the plurality of process tools; and
 - a gas purge device, wherein the gas purge device is included in the process intermediate station.
2. (Original) The system of claim 1 wherein the operating control system is a material control system (MCS).
3. (Original) The system of claim 1 further comprising a manufacturing execution system (MES) connected to the operating control system.
4. (Original) The system of claim 3 wherein the MES comprises an operation job supervisor (OJS).
5. (Original) The system of claim 3 wherein the MES comprises a dispatcher.
6. (Currently Amended) The system of claim 1 wherein the process intermediate station is the stocker.
7. (Currently Amended) The system of claim 1 wherein the process intermediate station is the OHB.

8. (Previously Presented) The system of claim 1 wherein the process intermediate station is a first process intermediate station that is not integral to any of the plurality of process tools and the system further comprises a second process intermediate station that is not integral to any of the plurality of process tools, wherein the first process intermediate station is the stocker and the second process intermediate station is the OHB.

9. (Previously Presented) The system of claim 1 wherein the process intermediate station is one of at least two process intermediate stations that are each not integral to any of the plurality of process tools, wherein the gas purge device is one of a plurality of gas purge devices, and wherein each of the at least two process intermediate stations is one of a stocker including one of the plurality of gas purge devices and an OHB including one of the plurality of gas purge devices.

10. (Original) The system of claim 1 wherein the gas purge device uses nitrogen as purging gas.

11. (Previously Presented) A system for manufacturing semiconductor IC devices, the system comprising:

an operating control system;
a plurality of process tools each in communication with the operating control system;
a plurality of process intermediate stations each in communication with the operating control system, wherein each of the plurality of process intermediate stations is one of a stocker and an overhead buffer (OHB) that is not integral to any of the plurality of process tools; and
at least one gas purge device included in at least one of the plurality of process intermediate stations.

12. (Original) The system of claim 11 further comprising a manufacturing execution system (MES) connected to the operating control system.

13. (Original) The system of claim 11 wherein the MES includes a dispatcher.

14. (Original) The system of claim 13 wherein the dispatcher includes dispatching rules for dispatching a workpiece among processing equipment.

15. (Previously Presented) The system of claim 14 wherein dispatching the workpiece includes dispatching the workpiece among the plurality of process intermediate stations.

16. (Previously Presented) A method for automatic nitrogen purge processing in manufacturing semiconductor IC devices, comprising:

transferring, via an operating control system, a workpiece from a first process tool to a process intermediate station, wherein the process intermediate station is one of a stocker and an overhead buffer (OHB) having a gas purge station;

performing gas purging of the workpiece via the gas purge station of the process intermediate station; and

transferring, via the operating control system, the workpiece to a second process tool, wherein the process intermediate station is not integral to either of the first and second process tools.

17. (Previously Presented) The method of claim 16 wherein the operating control system is a manufacturing execution system (MES) configured to control transfer of the workpiece between the process intermediate station and the first and second process tools.

18. (Previously Presented) The method of claim 16 wherein the operating control system includes a material control system (MCS) configured to control transfer of the workpiece between the process intermediate station and the first and second process tools.

19. (Original) The method of claim 16 wherein the workpiece is a lot including a plurality of wafers.

20. (Original) The method of claim 16 wherein the workpiece has at least one wafer included in a front opening unified pod (FOUP).

21. (Previously Presented) The method of claim 16 wherein the process intermediate station is the stocker.

22. (Previously Presented) The method of claim 16 wherein the process intermediate station is the OHB.

23. (Cancelled).

24. (Cancelled).

25. (Previously Presented) The method of claim 16 wherein the gas purge station is one of a plurality of gas purge stations, the method further comprising selecting one of the plurality of gas purge stations to perform the gas purging based on an optimized gas purge queue time, wherein the process intermediate station to which the workpiece is subsequently transferred after the one of the plurality of gas purge stations is selected has the selected one of the plurality of gas purge stations.

26. (Previously Presented) The method of claim 16 further comprising updating a tag ID after gas purging is performed, wherein the tag ID contains process history information associated with the workpiece, and wherein updating the tag ID includes updating the process history information to reflect the performance of the gas purging.

27. (Previously Presented) The method of claim 16 further comprising performing gas re-purging if a shelf time after the gas purging is longer than a pre-determined time.

28. (Previously Presented) The method of claim 16 further comprising raising a flag for hold if the workpiece has no associated process history information available.

29. (Original) The method of claim 16 wherein the gas purging comprises nitrogen purging.